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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,633	10/20/2003	Ching-Pin Wang	WANG3201/EM	1811

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EXAMINER

DHARIA, PRABODH M

ART UNIT	PAPER NUMBER
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2629

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/02/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/687,633

Applicant(s)

WANG ET AL.

Examiner

Prabodh M. Dharja

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.
2. **Status:** Receipt is acknowledged of papers submitted on 01-04-2007 under amendments, which have been placed of record in the file. Claims 1-7 are pending in this action.

Response to Amendment

3. The amendment filed 01-04-2007 does not introduces new matter into the disclosure. The added material is supported by the original disclosure.
4. Applicant has addressed the objection to specification and claims. Applicant has amended the claim and specification per objection. Therefore objection to claim and specifications are withdrawn.

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1 and 6-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Bohn (Patent No.: US 7,068,257 B1).

With respect to Claim 1, Bohn discloses a light guiding device of an optical mouse (See figures 2, 6, and 7; column 3, lines 55-57; column 5, line 11; light guiding device is comprised of all elements contained in figure 7), implemented inside the optical mouse applied to an operating

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surface (column 6, lines 60-65: target area ~ operating surface), the optical mouse having a light device to project an incident light (column 4, lines 31,32: LED ~ light device), the light guiding device comprising: a bottom (See figure 7, element 18; column 3, line 66), to define a cavity (See figure 7, the cavity is equivalent to the space surrounding elements 110, 112, 28, and 114b Col. 3, Line 66 to Col. 4, Line 4); and a first lens part disposed facing the light device, to receive the incident light projected by the light device and focus the incident light to project (See figure 7, element 120; , column 5, lines 33-36) it toward a single light channel (figures 15A-15F,24 and 25 Col. 8, lines 17-21); a prism plane disposed obliquely towards the first lens part to totally reflect the incident light focused by the first lens part (column 5, lines 51-54 and lines 56-58; figure 8, element 120: collection lens -first lens, element 110: channel ~ prism plane, the side facing element 112) said prism plane forming a rear face of said single channel (figure 15A-15F,24 and 25, Col. 6, Lines 58-65, Col. 8, Lines 17-21); and a slope plane arranged obliquely substantially towards the same direction as the prism plane, to slightly and downwardly refract the incident light after a total reflection in order to guide the incident light totally reflected by the prism plane into the cavity (column 6, lines 61-65;figure 7, element 28: Baffle ~ slope plane) said slope plane forming a front of face of said single channel (figure 15A-15F,24 and 25, Col. 6, Lines 58-65, Col. 8, Lines 17-21).

With respect to Claim 6, Bohn teaches a second lens part disposed in the cavity (See figure 7, element 114b: imaging lens ~ second lens), to focus and project reflecting light that is projected from the operating surface (column 5, lines 36-39).

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With respect to Claim 7, Bohn teaches the light device is a light emitting diode (LED) die (column 4, lines 31, 32).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bohn (Patent No.: US 7,068,257 B1) as applied to claims 1, 6 and 7 above.

With respect to Claim 2, Bohn does not mention that the incident light after being focused by the first lens part has an included angle of 45 degrees relative to the prism plane. Bohn teaches a first prism plane (figure 7, element 110) makes an angle of 52.5 degrees from the left horizontal (See figure 6 and Table 1, a2 ~ 52.5 degrees) and a second prism plane makes an angle of 47.5 degrees from the left horizontal (See figure 6 and Table 1, b2 ~ 47.5 degrees). Bohn teaches most of the light projected from the light device is directed through channels 110 and 112 of figure 8 and simultaneously illuminates the operating surface (column 7, lines 14-16 and lines 23,24; operating surface ~ target area). In order for the incident light to achieve a 45 degree angle relative to the prism plane after being focused by the first lens part it can be seen from figure 8 that when the channel 110 is shifted closer to channel 112 by the corresponding

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amount of angle change, equivalent results of focusing incident light to the operating surface (the operating surface is represented by T in figure 8) are achieved. It would have been obvious for a person of ordinary skill in the art at the time the invention was made to have incident light after being focused by the first lens part having an included angle of 45 degrees relative to the prism plane by shifting the first prism plane of Bohn to the left by an amount corresponding to the decline of the prism plane to achieve an angle of 45 degrees so light is more evenly distributed across the operating surface and non-uniform illumination is reduced (column 8, lines 7-11).

With respect to Claim 3, Bohn does not explicitly state that the incident light after the total reflection is parallel with the operating surface. Note the above discussion regarding the modified teachings of Bohn such that the angle of the prism plane is at 45 degrees and shifted accordingly to the left. Noting that the prism plane forms a total internal reflecting surface, the incident light projecting from the prism plane is parallel with the operating surface. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the incident light after the total reflection is parallel with the operating surface, as taught from the modified teachings of Bohn, so light is more evenly distributed across the operating surface and non-uniform illumination is reduced (column 7, lines 24-27).

With respect to Claim 4, Bohn does not explicitly state that the incident light projected by the light device has an included angle of 90 degrees relative to the operating surface. Bohn teaches a light device placed directly above the first lens (See figure 7, element 210: LED = light device, element 120: collection lens -first lens, column 5, lines 34,35), resulting in a direct

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projection of incident light to the first lens, which meets the limitation of having an included angle of 90 degrees relative to the operating surface. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have incident light projected by the light device having an included angle of 90 degrees relative to the operating surface, as taught by Bohn, so as to direct light to the operating surface via the prism plane (column 5, lines 33-37).

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bohn (Patent No.: US 7,068,257 B1) as applied to claim 1 above, and further in view of Chin (Pub. No.: US 2003/0201951 A1).

With respect to Claim 5, Bohn teaches a bottom (See figure 7, element 18, column 3, line 66) that has a cavity so that incident light is projected on the operating surface. Bohn does not explicitly state that the optical mouse has a bottom opening facing directly to a cavity opening formed in the cavity's bottom such that the bottom opening faces directly to the cavity opening formed in the cavity's bottom when the light guiding device is implemented in the optical mouse, so that the incident light in the cavity is projected on the operating surface through the bottom opening and the cavity opening. Chin teaches an optical mouse ([0001]) has a bottom opening facing directly to a cavity opening formed in the cavity's bottom such that the bottom opening faces directly to the cavity opening formed in the cavity's bottom (See figure 1, element 221: bore ~ bottom opening), so that the incident light in the cavity is projected on the operating surface through the bottom opening and the cavity opening ([0019], lines 9-12). It would have been obvious for a person of ordinary skill in the art at the time the invention was made to have a

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bottom opening facing directly to a cavity opening formed in the cavity's bottom, as taught by Chin, to the light guiding device of an optical mouse of Bohn so as to realize excellent mobility of the mouse (Chin." [0008.7, last line).

Response to Arguments

9. Applicant's arguments, see remark, filed 01-04-2007, with respect to the rejection(s) of claim(s) 1 under Bohn (Patent No.: US 7,009,598 B1) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Bohn (Patent No.: US 7,068,257 B1).

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Allen et al. (5,578,813) Freehand image scanning device, which compensates for non-linear movement.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prabodh M. Dharia whose telephone number is 571-272-7668. The examiner can normally be reached on M-F 8AM to 5PM.

12. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

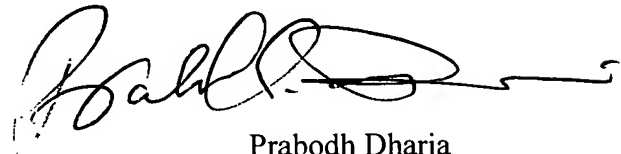
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13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

A handwritten signature in black ink, appearing to read 'Prabodh Dharia', with a long horizontal flourish extending to the right.

Prabodh Dharia

Partial Signatory Authority

AU 2629

February 28, 2007